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No. 161

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GUANGDONG STATION BEGINS BROADCASTING IN FM STEREO

Beijing WUXIANDIAN [RADIO] in Chinese No 2, 11 Feb 81 p 1

[Announcement provided by Shu Mingliang [2050 2494 0081]]

[Text] On 1 January of this year, the Guangdong Province People's Broadcasting Station in Guangzhou began broadcasting FM Stereo programs on 99.2 megahertz. Since that day, listeners having stereo receivers have been able to enjoy stereo programs broadcast by that station. All of these programs transmit literary and art content. There are live broadcasts of music from the theater, ballet, etc.; there are recordings of music performed in a recording studio; there are also some stereo programs that have been developed from imported tape recordings, records, etc. That station is also preparing a large number of world-famous compositions and performances by famous national stars to be broadcast to listeners in this series of programs.

These stereo programs broadcast by the Guangdong Province People's Broadcasting Station employ the frequency conduction system that is in common use throughout the world. By using the frequency conduction system, the broadcast can be multiplexed. That is to say, when using a stereo receiver to receive the broadcast, if the stereo indicator light is on, the program heard is stereophonic. Moreover, this program can be received on the monophonic FM receiver, except that the sound will not be stereophonic.

Besides the scheduled stereo programs broadcast to listeners each day, the Guangdong Province People's Broadcasting Station conducts various experiments according to national requirements during the rest of the time. Among these experiments are: testing of the frequency modulation stereo broadcast system; multi-track recording techniques; program multiplexing performance; electric wave propagation performance; transmitter performance and comprehensive system parameters, etc. To insure the successful conducting of the experimental work, the station introduced some necessary equipment, including a 24-input, 16-output multi-channel signal mixer, a 16-track tape recorder; reverberation, time delay, pitch reducer, and such kinds of audio equipment and various kinds of monitoring equipment, etc. While experiments are being carried on, the station sometimes also transmits a signal into the air. At such times, listeners with FM receivers and FM stereo receivers can also receive the signal.

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THAILAND

COMMUNICATIONS AUTHORITY DESCRIBES SERVICES, DEVELOPMENTS

CAT Duties, Services

Bangkok SIAM RAT SPECIAL ISSUE in Thai 25 Feb 81 p 1

[Article: "The Fourth Anniversary of the Communications Authority of Thailand Is On 25 February 1981"]

[Text] This is a year when many countries throughout the world have experienced an oil crisis. This is particularly true for Thailand. We are still in the position of an oil-importing country and, therefore, we have been seriously affected by this. This is evident from the fact that the government has encouraged everyone to cooperate in conserving oil and electricity so that we will have oil and electricity for use in the future.

The Communications Authority of Thailand [CAT], as a state enterprise, carries on activities concerning public utility work to serve the people. It carries on activities concerning the postal, telecommunications and finance services, both domestically and abroad. On 25 February 1981, it will celebrate its fourth anniversary. The CAT is trying very hard to develop postal communications and telecommunications concerning both duties and responsibilities in order to modernize things and have the capabilities to meet the needs of the people and of the various sectors and businesses in an efficient manner. The goal is not to improve and expand activities just for the people living in Bangkok or for those living in the larger provinces and districts. Rather, it is trying to expand things to the remote rural areas in order to make it more convenient [for the people] to use the services of the CAT and to promote and respond to the policies of the government, which wants development to spread throughout the country. This can be seen from the various projects that the CAT has implemented, regardless of whether it is the local posts and telegraph expansion project, the rural area posts and telegraph expansion project, the maritime mobile radio development project, the regional telex service expansion project or the many other projects.

Even though in the present economic situation everyone must help to conserve oil and electricity, it is necessary that the various business activities be carried on without interruption. The role of postal communications and telecommunications will become more and more important in carrying on the various business activities. Thus, the CAT must quickly develop things in order to make the postal, telecommunications and finance services more efficient so that they can respond to the policies of the government, which wants everyone in the country to conserve so that service is fast, definite and safe.

Policies

The important activities of the CAT that follow the policies in controlling things are as follows"

1. Service must be fast, sure, regular, safe and economical.
2. There must be self-reliance in order to show the capabilities for self-reliance in financial matters and in accepting tasks concerning expanding postal and telecommunications activities, which are state services reaching to the local and rural areas.
3. There must be financial, personnel and administrative flexibility in carrying out the tasks. This will result in the services provided the people being more efficient.
4. Economization is necessary because the Communications Authority of Thailand must rely on itself. Thus, frugality must be practiced in order to make things secure for the CAT in the future.
5. Postal communications and telecommunications must be improved and developed in order to be able to satisfy the rising demands of the people in both the public and private spheres.
6. Providing good security for the officials and employees in the various sectors must be implemented and promoted so that the security provided is equivalent to that of other state enterprises. This must be done within the limits of and in accord with the policies of the government.

The services for which the CAT is responsible:

At present, the CAT is responsible for providing three types of public utility services: The postal service, the telecommunications service and the finance service. The breakdown is as follows:

1. The postal service:
 - 1.1. Domestic postal service.

Domestic parcel post service [small parcels].

Domestic parcel post service [large parcels].

1.2. International postal service.

International parcel post service [small parcels].

International parcel post service [large parcels].

2. Telecommunications service:

2.1. Domestic telecommunications service:

Telegraph service.

Leased circuit service.

Document facsimile service.

Data transmission service.

Telex service.

Radio telephone service.

HF radio service.

VHF radio service.

UHF radio service.

Maritime mobil radio service.

Radio paging service.

Phototelegraph service.

Telegram Via telex service.

Telegram via telephone service.

Telegraph address registration service.

2.2. International telecommunications service:

Telegraph service.

Leased circuit service.

Document facsimile service.

Data transmission service.

Telex service.

Telephone service.

Maritime mobile radio service.

Phototelegraph service.

Program transmission service.

Television transmission service.

Press bulletin service.

3. Finance service:

3.1. Domestic money order service.

3.2. Domestic money exchange service.

3.3. International money order service.

Specific Programs

Bangkok SIAM RAT SPECIAL ISSUE in Thai 25 Feb 81 pp 3, 5

[Article: "Programs of the Communications Authority of Thailand"]

[Text] The Delivery Posts and Telegraph Expansion Project, Third Period (1977-1981)

The goal of the delivery posts and telegraph expansion project is to facilitate things in providing postal and telecommunications service and finance service, especially deliveries, for merchants, the people and government units in business quarters and in densely populated areas, both in Bangkok and in the regional areas. This program was appended to the Second Development Plan (1967-1971). Concerning the things that were done between 1967 and 1979, a total of 45 delivery-type posts and telegraph offices were established. Eighteen were established in Bangkok while 27 were established in the regional areas.

As for the activities carried on in fiscal year 1980, the goal was to establish 10 delivery-type posts and telegraph offices, six in Bangkok and four in the regional areas, by buying buildings and land and improving [the buildings] to turn them into offices. The budget for this was 19.7 million baht. The results were that nine delivery-type posts and telegraph offices were established. Six are located in Bangkok; these are the Senanikhom, Ngamwongwan, Lhuainamthai, Khlongsan, Watphrayakrai and Prasanmit posts and telegraph offices. Three, the Suanmon, Khon Kaen University and Khohong posts and telegraph offices, are located in the regional areas. As for the one other office, the Sanam Chan posts and telegraph office, the building and land have already been purchased. At present, the building is being renovated in order to establish the posts and telegraph office.

As for fiscal year 1981, the CAT has already established two offices, the Chang Phuok posts and telegraph office in Chiang Mai Province and the Phosi posts and telegraph office in Udon Thani Province. Buildings and land are in the process of being purchased for three

additional offices, the Muong Tai posts and telegraph office in Sisaket Province and the Silom and Lanluang posts and telegraph offices in Bangkok. Also, the buildings for the Ban Don posts and telegraph office in Surat Thani Province, the SamYaek posts and telegraph office in Nonthaburi Province and the Sathupradit, Nongkhaem and Bangkok Yai posts and telegraph offices in Bangkok are being renovated.

The Local Posts and Telegraph Expansion Project, Fourth Period (1977-1981)

The goal of the local posts and telegraph expansion project is to expand postal, telecommunications and finance services to all the regional localities throughout the country. This will be done by establishing posts and telegraph offices and taking over the tasks of the Communications Authority of Thailand that were entrusted to the districts, railroad stations and private sectors and carrying out the tasks itself.

This project was appended to the First National Economic and Social Development Plan (1961); it has been in effect until the present (1980). The four periods of the project total 20 years. It has been possible to establish a total of 496 posts and telegraph offices.

As for the activities carried on in fiscal year 1980, the target was to establish posts and telegraph offices by renting private buildings and having them serve as temporary offices and then buying land and constructing offices and living quarters or buying buildings and land for offices, with living quarters in the rear. Thirty offices were to be established for 9.8 million baht. The result was that all 30 posts and telegraph offices were established. One additional office was established as a special case, making a total of 31 altogether. The 31 offices are:

1. The Phukhae posts and telegraph office [PTO] in Saraburi Province.
2. The Nadi PTO in Prachinburi Province.
3. The Saimun PTO in Yasothon Province.
4. The Khowang PTO in Yasothon Province.
5. The Ban Luom PTO in Nakhon Ratchasima Province.
6. The Thepsathit PTO in Chaiyaphum Province.
7. The Sangkhom PTO in Udon Thani Province.
8. The Kutchap PTO in Udon Thani Province.
9. The Ubonrat PTO in Khon Kaen Province.
10. The Nonghin PTO in Loei Province.
11. The Muong Suang PTO in Roi Et Province.
12. The Phukradung PTO in Loei Province.

13. The Plong PTO in Chiang Rai Province.
14. The Mae Lao PTO in Chiang Rai Province.
15. The Chiang Muan PTO in Phayao Province.
16. The Mae Charim PTO in Chiang Mai Province.
17. The Saingam PTO in Kamphaengphet Province.
18. The Lankrabu PTO in Kamphaengphet Province.
19. The Nachallang PTO in Phetchabun Province.
20. The Huadong PTO in Phichit Province.
21. The Saraphattana PTO in Nakhon Pathom Province.
22. The Suanphung PTO in Ratchaburi Province.
23. The Chamao PTO in Nakhon Sithammarat Province.
24. The Mapammarit PTO in Chumphon Province.
25. The Bangkaeo PTO in Phathalung Province.
26. The Pakkhlong PTO in Phathalung Province.
27. The Chalung PTO in Satun Province.
28. The Ban Phru PTO in Songkhla Province.
29. The Lammai PTO in Yala Province.
30. The Patong PTO in Chanthaburi Province.
31. The Nanaeu PTO in Loei Province (opened as a special case).

Because the CAT started establishing posts and telegraph offices at the beginning of the fiscal year -- 1 November was stipulated as the date [to start] establishing posts and telegraph offices -- to date (January 1981) the CAT has carried out things in accord with the local posts and telegraph expansion project, fourth period (1977-1981) and completed the work. That is, in fiscal year 1981 it has established an additional 31 offices:

1. The Thaluang PTO in Lopburi Province.
2. The Kaotchasit PTO in Saraburi Province.
3. The Bothong PTO in Chonburi Province.
4. The Kapchoeng PTO in Surin Province.
5. The Lamduan PTO in Surin Province.
6. The Huaithapthan PTO in Sisaket Province.
7. The Yangchumnoi PTO in Sisaket Province (Bangchumnoi).
8. The Pakkhat PTO in Nongkhai Province.
9. The Phoncharoen PTO in Nong Khai Province.
10. The Namon PTO in Kalasin Province.

11. The Wangsammo PTO in Udorn Thani Province.
12. The Duang PTO in Loei Province.
13. The Namun PTO in Nan Province.
14. The Mae Moh PTO in Lambang Province.
15. The Thungphachang PTO in Lamphun Province.
16. The Mae Chedi PTO in Chiang Rai Province.
17. The Wang Saiphun PTO in Phichit Province.
18. The Khlonglan PTO in Kamphaengphet Province.
19. The Noenmaprang PTO in Phitsanulok Province.
20. The Thongphaphumi PTO in Kanchanaburi Province.
21. The Tha Sadet PTO in Suphanburi Province.
22. The Nongyaplong PTO in Phetchabun Province.
23. The Phromkhiri PTO in Nakhon Sithammarat Province.
24. The Thungtako PTO in Chumphon Province.
25. The Banphon PTO in Nakhon Sithammarat Province.
26. The Lamphlai PTO in Songkhla Province.
27. The Sukhirin PTO in Narathiwat Province.
28. The Nayong PTO in Trat Province.
29. The Khlongpang PTO in Trat Province.
30. The Mae Khari PTO in Phathalung Province.
31. The Wangphikun PTO in Phetchabun Province (opened as a special case).

Thus, a total of 527 posts and telegraph offices have been opened in the various localities in accord with this program.

The Rural Area Posts and Telegraph Expansion Project, First Period (1978-1981)

The goal of the rural area posts and telegraph expansion project is to establish posts and telegraph offices in the rural areas throughout the country to support the local posts and telegraph expansion project. Pilot activities were started in fiscal year 1978. The work has been carried on in the same manner as the local posts and telegraph expansion project.

Concerning the things that were done in fiscal years 1978-1980, the CAT was able to establish the required number of posts and telegraph offices in accord with the target. In fiscal year 1978,

10 offices were established; in fiscal year 1979, 15 offices were established; in fiscal year 1980, 15 offices were established, making a total of 40 offices, which completely fulfilled [the plan]. As for the activities in fiscal year 1980, problems were encountered in finding durable articles for the newly-opened offices because when the 1980 budget was proposed, the Office of the National Economic and Social Development Board requested that the CAT carry out this project as part of the National Economic and Social Development Plan and the approval of the cabinet had to be obtained before things could be implemented. The CAT completed the proposal and submitted it to the Office of the National Economic and Social Development Board to have it discuss submitting it to the cabinet for consideration and approval. The Development Board discussed this and recommended that the rural area posts and telegraph expansion project be made a part of the local posts and telegraph expansion project, which the CAT had already implemented. It is also felt that the CAT should increase the target of the local posts and telegraph expansion project from 30 to 45 offices a year. It also discussed taking control of the district-level activities and the cabinet issued a resolution approving this and approved the recommendations of the Development Board on 2 December 1980.

However, in fiscal year 1980, the CAT established a total of 15 posts and telegraph offices in accord with the original target. These were:

1. The Nongri PTU in Lopburi Province.
2. The Thakholung PTU in Lopburi Province.
3. The Huayung PTU in Chainat Province.
4. The Paknam Prasae PTU in Rayong Province.
5. The Nachomtron PTU in Chonburi Province.
6. The Thabunai PTU in Chonburi Province.
7. The Khlongphai PTU in Nakhon Ratchasima Province.
8. The Tharai PTU in Sakon Nakhon Province.
9. The Suwannakhuha PTU in Udon Thani Province (instead of in Khon Kaen City).
10. The Fongtan PTU in Chiang Mai Province.
11. The Mae Kham PTU in Chiang Rai Province.
12. The Pakdonc PTU in Kamphaengphet Province.
13. The Jarayalai PTU in Suphanburi Province.
14. The HuaiKreabok PTU in Ratchaburi Province.
15. The Pathomphon PTU in Chumphon Province.

The CAT began establishing posts and telegraph offices at the beginning of the fiscal year by stipulating that the work begin on 1 November. Thus, to date (January 1981), the CAT has established an additional 10 posts and telegraph offices in accord with the rural area posts and telegraph expansion project, first period, (1978-1981) fiscal year 1981. These are:

1. The Khoktue PTO in Lopburi Province.
2. The Uilang PTO in Lopburi Province.
3. The Nondaeng PTO in Nakhon Ratchasima Province.
4. The Donkhung PTO in Sakon Nakhon Province.
5. The Thaphra Khon Kaen PTO in Khon Kaen Province.
6. The Wangkaphi PTO in Uttaradit Province.
7. The Umong PTO in Lamphun Province.
8. The Thachai PTO in Sukhothai Province.
9. The Ban Krut PTO in Prachuapkhiri Khan Province.
10. The Palat PTO in Pattani Province.

A total of 50 posts and telegraph offices have been established in accord with this project.

The Posts and Telegraph Expansion Project In the Bangkok Metropolitan Area, Second Period (1972-1981)

The goal of the posts and telegraph expansion project in the Bangkok Metropolitan area is to develop the parcel posts and telegraph delivery system in Bangkok and the nearby provinces so that deliveries are faster and more efficient. This project was appended to the First Development Plan (1961-1966). The [postal] delivery areas in Bangkok were divided into 12 districts and central posts and telegraph offices were constructed in all 12 districts. During the second period, during the years 1972 to 1976, the delivery areas outside Bangkok, including Nonthaburi and Samut Prakan, were divided into 17 additional districts. Permission was received to build 10 central posts and telegraph offices in these districts and to make preparations to purchase land in four other places, the total budget being 69.6 million baht.

As for the results of these activities, by fiscal year 1979, three central posts and telegraph offices had been built and opened and land had been purchased for four other offices in accord with the targets. As for construction that was not completed in accord with the targets, this resulted from the fact that problems and obstacles

were encountered concerning locating land and concerning the great increase in the cost of building materials. This slowed down the work and resulted in a failure to complete the work in accord with the stipulated plans. As for the things done in 1980, the target was to build three central posts and telegraph offices; the Bangkokhuthien PTO, the Nonthaburi PTO and the Phrapradaeng PTO. The budget for this was 16.98 million baht. As for what was accomplished, the land in the delivery areas was surveyed and delivery manuals were prepared. As for constructing office buildings, designs were checked and revised and various documents were prepared in order to prepare to tender bids.

The Program to Expand Mobile and Fixed Radio Station Service For the Central Region and the Rural Areas (1981-1986)

The goal of the program to expand mobile and fixed radio station service is to help make things more convenient for the merchants, people and various businessmen in accord with the country's telecommunications plans and regulations and the National Economic and Social Development Plan, which has the aim of developing things and of having development move from the center to the various regions of the country in a widespread manner.

As for the targets and plan of action, this program is aimed at establishing vehicular radio and fixed radio station service in the localities and various provinces that do not have such service and at expanding service in the provinces that already have such service. The [number of] channels will be increased and the work system of the radio centers will be changed from the system of using operators to an automated system in order to have convenient and fast service, to have standards equivalent to those of the center and to be able to contact all parts of the country and even foreign countries. Forty-line radio service centers that use operators will be established in the provinces at the rate of at least 10 centers a year and 500-line automated radio service centers will be established at the rate of two centers a year. Things will be discussed both before and after based on the growth of the localities and the needs of the people who use these services. By the end of this program's investment period, 42 radio service centers of the manually operated type and 18 radio service centers of the automated type will have been established and these will be capable of providing service to a total of approximately 8,200 numbers.

As for the plans to carry out the tasks, the CAT will have completed things by 1986. Investment plans have been made for obtaining tools, radio equipment and manpower on a continuing basis depending on the financial resources and the capabilities for carrying on the work for each of the 6 years. The total budget for this is 656.04 million baht, which is to be obtained from the income of the CAT.

This program was approved by the Board of the CAT at the 20th/1980 conference held on 4 November 1980. At present, the matter is being presented to the Office of the National Economic and Social Development Board for its approval and for later presentation to and approval by the cabinet.

The Asean Underwater Cable Project

The goal of the Asean underwater cable project is to increase international telecommunications efficiency between the Asean countries by using an underwater cable system in conjunction with the use of a satellite system. Besides the fact that traffic will be passed by way of the satellites, which there are large numbers of and which have cost much money, this will show the economic cooperation between Thailand and the other Asean countries. The CAT has received permission from the cabinet to invest in this and will invest in the underwater cable as follows:

For the Singapore-Philippines section, approximately 86.3 million baht, or 5 percent, will be invested.

For the Singapore -Indonesia section, approximately 13 million baht, or 2 percent, will be invested.

For the Singapore-Malaysia-Thailand section, 814.73 million baht, or 44.4 percent, will be invested.

The Singapore-Philippines and the Singapore-Indonesia sections of the underwater cable, work on which started in 1974, have been completed and put into use. All five Asean countries invested in this. Also, international telecommunications companies such as the Cable and Wireless Ltd Company of Hong Kong, the Overseas Telecommunications Commission of Australia and the Kokusai Denshin Denwa (K.D.D.) Company of Japan invested in two sections of this underwater cable.

As for the Singapore-Malaysia-Thailand section, the route has been surveyed and two places that will be used as cable stations have been stipulated. These two places are in Hatchao Samran Commune in Phetchaburi Province and in Kaoseng Commune in Songkhla Province. Land in the Hatchao Samran area has been purchased and preparations have been made to contract people to prepare the land and build fences and earth retaining walls. Also, routes have been stipulated for linking signals between Hatchao Samran and the Central Office of the Communications Authority of Thailand. This passes two intermediate signal stations in Paktho District in Ratchaburi Province and in Bangthorat Commune in Samut Sakhon Province. It has been stipulated that land near the Paktho posts and telegraph office will be used to build one intermediate signal station and that land in Bangthorat in Samut Sakhon Province will be leased from the Treasury Department to build the second intermediate signal station.

As for the underwater cable station in Songkhla Province, permission has been requested to use the land of the Southern Weather Forecasting Station, Meteorological Department. The CAT has built a new radar tower and new living quarters for the Meteorological Department in the area of the Southern Weather Forecasting Center. And it has been stipulated that the linked signal route will run from Songkhla Province past the intermediate signal point on top of Kho Hong Mountain to the international telecommunications exchange in Hat Yai (it has been stipulated that this is to be completed by the beginning of 1982).

The underwater cable from Singapore to Malaysia and Songkhla Province will be a 5-megahertz cable and it will have 480 telephone signal sections. As for the cable from Songkhla to Phetchaburi Province, it will be a 12/14-megahertz cable with 1,380 signal sections.

The CAT has coordinated things with the countries concerned and made documents to submit tenders for the Singapore-Malaysia-Thailand section of the Asean underwater cable system. Tenders were submitted on 25 September 1980 and they were opened on 5 January 1981. On that same day, at 1459 hours, ceremonies were held at the conference hall of the Ministry of Communications to sign the record of understanding for the construction of this section of the underwater cable. Police Major General Suchat Phuaksakon, the director-general of the Posts and Telegraph Department, signed on behalf of the Thai government. The representatives for the governments of Malaysia and Singapore were Datuk Mohamad Nadsim, the director-general of the Telecommunications Department of Malaysia, and Mr Sim Dee Bun, the permanent secretary (communications), Singapore Ministry of Communications. Besides these, also attending were senior government officials from the Ministry of Communications, the CAT and the Posts and Telegraph Department. These people served as witnesses. The signing of this record of understanding is considered to be the first success of the Asean underwater cable project, third period, which is to be completed by the end of 1981.

The Singapore-Malaysia-Thailand section of the underwater cable will increase the capabilities of the CAT, which is the government sector that is responsible for seeing to it that telecommunications service proceeds smoothly without interruption for the benefit of the country and the people in general.

The Regional Telex Service Expansion Project (1980-1984)

The goal of the regional telex service expansion project is to expand telex service to all provinces. Telex service will be opened in the provinces and localities that do not have this service and telex service will be expanded in the provinces and localities that already have such service in order to meet the needs. The telex system will be improved in the regional areas so that the standards

are equivalent to those in the central region. The plan is to expand and establish automated telex exchanges, with approximately 250 numbers, in five places; Chiang Mai, Hat Yai, Phatthaya, Phuket and Khon Kaen. These will be built between 1980 and 1984. As for the construction of smaller automatic exchanges with at least 12 numbers in the provinces and localities that do not have telex service, this will be carried on at the same time. Twelve exchanges will be constructed a year, with the total budget being approximately 110 million baht.

The regional telex service expansion project was approved by the Ministry of Communications on 8 February 1980 and submitted to the Office of the National Economic and Social Development Board for discussion and presentation to the cabinet, which discussed the project and approved its inclusion in the Development Plan. The National Economic and Social Development Board considered matters and felt that the telex service of the various exchanges should be expanded in accord with the proposals of the CAT in order to meet the increasing needs in the future. On 2 December 1980, the cabinet issued a resolution agreeing with this and approving things in accord with the views of the National Economic and Social Development Board.

The Maritime Mobile Radio Development Project

The goal of the Maritime Mobile Radio Development project is to expand radio telecommunications transmission service between the receiving stations and the ships operating in the Gulf of Thailand, the Indian Ocean, the South China Sea, the Gulf of Tongking and the Pacific Ocean in order to increase efficiency. This project was implemented in the Third Development Plan (1972-1976). It was originally stipulated that two maritime mobile radio stations would be built in Phuket and Chanthaburi provinces. But changes were made. Instead of building a maritime mobile radio station in Chanthaburi Province, transmitter-receiver stations were built in Bangping and Bangpla communes in Samut Prakan Province. Also, the Bangkok radio station was improved, which could originally be used as a communications link with the transmitter-receiver stations in Bangping and Bangpla communes. In carrying out the past tasks, contracts were made to contract out the construction of a VHF transmitter-receiver station on top of Tosa Mountain. Tenders were also submitted for the construction of an HF transmitter station and living quarters for officials in Talat Yai Commune in Phuket Province and for the construction of a VHF transmitter-receiver station in Bangpla Commune, Samut Prakan Province; permission was received to use the buildings and to coordinate things with the Commercial Air Department in purchasing equipment. Approximately 80 percent of the work has been completed.

as for the results of the work carried on in fiscal year 1980, the construction of the VHF transmitter-receiver station on top of Tosa Mountain and the construction of the MF transmitter station and living quarters for officials in Talat Yai Commune, Phuket Province, has been completed. As for the VHF transmitter-receiver station in Bangpla Commune, Samut Prakan Province, construction is in the second phase; equipment has been purchased and everything has been purchased in accord with the targets.

The SPC International Telephone Exchange Construction Project (1981-1983)

The goal of this project is to increase efficiency so that international telephone service is more convenient, faster and more economical and so that it can satisfy the needs of the ever-increasing number of users. Also, international telephone service in the provinces will be expanded so that the people in the provinces have international telephone service equal in quality to that in the central region and so that they can hear each other clearly. This is also being done in order to support and encourage investment and tourism in the localities and make it possible for businessmen, merchants, the people and government officials to contact each other and coordinate things more efficiently. The Demand Service and International Subscriber Dialing (ISD) service systems will be expanded, which will make things much more convenient and much faster.

This project is in the implementation state. It is being implemented in order to have SPC equipment and exchanges. This will increase the efficiency of the service and control the use of the international telephone circuits so that results commensurate with the investments are achieved. The targets and methods of implementation are as follows:

1. The number of international telephone circuits will be increased in accord with trends in service use needs at a yearly rate of at least 10 percent of the circuits opened each year. These new exchanges will be capable of providing a maximum service of 1,000 circuits by 1992.
2. There will be a cut-over from exchange 2 for use at the new exchanges at the end of 1983. Exchange 1 will be closed down entirely.
3. Demand service telephone service (being put on hold by the operator and waiting to speak to the person abroad without having to hang up and having to wait for the return call) will be implemented for users throughout the country in 1984.
4. ISD service (the caller can dial out of the country without having to place the call through the operator) will be implemented for some

types of users who register with the CAT. Such users include hotels, companies, government units, embassies in Bangkok, tourist agencies and tourists at large hotels in Phatthaya and in Phuket Province. This will be implemented in 1984.

5. Demand service will be provided in the provinces by opening direct telephone circuits to the international telephone service center of the CAT.

6. Things will be coordinated with the Telephone Organization of Thailand to implement ISD service for all users in Bangkok and in the provinces.

As for the investments of this project, money will be spent for the SPC international telephone exchange equipment, for the installation of the equipment and for training all the officials. The total investment will reach approximately 120 million baht.

As for the benefits that will be gained by installing an SPC international telephone exchange, besides the fact that it is necessary to prepare international telephone circuits for use in expanding the work on time and in accord with the service needs of the country in the future and aside from the technical reasons, concerning the benefits from making investments, the project to install an SPC international telephone exchange will be very beneficial as compared with the amount of money invested and the expenditures for implementing things in the areas concerned. This will increase the revenues of the CAT and benefit the country's economic system in general.

The CAT submitted the SPC international telephone exchange installation project to the Office of the National Economic and Social Development Board on 11 December 1980 to have it discuss the project and then submit it to the cabinet for discussion and approval. At present, it is being considered by the Office of the National Economic and Social Development Board.

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INTERNATIONAL AFFAIRS

BRIEFS

USSR TV IN CSSR--As of 1 April, television audiences in Kosice, East Slovakia, will be able to receive the first program of Soviet television on the 27th channel of their TV sets. [Bratislava ROLNICKE NOVINY in Slovak 2 Apr 81 p 1]

CSO: 5500

COMMUNICATIONS MINISTER DISCUSSES SATELLITE PROJECT

Rio de Janeiro GAZETA MERCANTIL in Portuguese 10 Mar 81 pp 1, 7

[Report from Paris by Mario de Almeida]

[Text] Reactivation of plans to launch an exclusive telecommunications satellite is making the Brazilian Government the center of attraction of strong international competition. The basic project, which has been pigeonholed in Brasilia for 5 years, is estimated at \$72 million. That is the price to place two satellites in orbit—one of which will be a reserve—with channels for telephone, television, voice and the transmission of data for computers.

The cost seems to be a bargain when compared to the \$5 million that the Brazilian Telecommunications Company (EMBRATEL) pays every year to use a segment of the channels of the Intelsat consortium. According to conservative estimates, the Brazilian project can pay in 6 years if one takes into account the increased demand for those transmission services.

The whole deal, however, is much bigger. Counting the ground installations for the reception and translation of information, the satellite "package" will cost \$400 million, which makes the deal particularly attractive. In Paris yesterday, Communications Minister Haroldo Correa de Mattos began a program of visits to several potential French suppliers, which shows the importance of the contract.

Lodged by his hosts at the Bristol Hotel—a place where money cannot always buy lodgings—on his first day in Paris, Minister Mattos fulfilled a series of social commitments, being extremely careful everytime he had to say "yes."

As a matter of fact, the minister insists that nothing has yet been decided, which is true, inasmuch as he has not even visited the other side of the competition: the United States. The first battle is the selection of the rocket that will carry the two satellites of the project. There is a European bid from the consortium that produces the rocket Ariane, built mainly by the French Aerospatiale and German manufacturers. One option is a trip aboard the U.S. recovery craft Columbia, which will be tested for the first time at the end of this month. The cost of a space launch with that new method, which is known in the United States as the "shuttle," is less than that of the competitor. But decision is not limited only to that item.

The satellite properly speaking may also be an American one, for example, from the Hughes Plant, which builds an advanced model the design expenses of which have already been diluted by the number of orders. But the French Aerospatiale company also offers its model. Either of the two launching vehicles can carry the different models of satellites. The deal, therefore, is taking on the shape of a financing operation. That deal, worth \$72 million, must receive very favorable credit terms from any of the suppliers--a term of 20 years to begin and interest much below market rates.

The competition seems to be much better organized on the French side for the rest of the deal. The French ground installations already offered to the Brazilian Government may be from CSF-Thomson or Matra. Both are private companies strongly supported by the government in large telecommunications contracts. It is believed in Paris that Matra is in a better position in the race for the Brazilian satellite inasmuch as CSF-Thomson won an important contract from the Brazilian Government 6 months ago to build the new flight control system in the Center-South region, called Siscea-Two. The Brazilian minister reported that he is now studying the conditions offered by each company to finance the project.

The amount of the total credit, estimated at \$400 million, suggested that the project conceived and frozen in the past administration has been taken out of the pigeonhole more for reasons related to the Brazilian current accounts balance than for reasons of an emergency in the telecommunications sector. Financing Brazil's foreign deficit by means of supply contracts combined with free loans has become a French speciality in the last 2 years, which gives its companies an advantage in competition with U.S. factories, which are not much accustomed to "package" negotiations directly with the Brazilian Government.

Minister Haroldo de Mattos did not say when he will make the final decision but the circuit of the French state banks, normally activated to close the deal when the technical part is decided, is preparing to act on that contract before the end of June.

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CSO: 5500/2173

BRAZIL

VIDEOTEX PROJECT COOPERATION ACCORD SIGNED WITH FRANCE

Rio de Janeiro JORNAL DO BRASIL in Portuguese 12 Mar 81 p 16

[Text] Paris--The ministers of communications of Brazil, Haroldo Correa de Mattos, and of France, Pierre Ribes, yesterday signed a cooperation agreement in the field of communications that will be applied in the first phase to data transmission. France will contribute its experience to insure the success of the "videotex" system installed in Sao Paulo by the Sao Paulo Telecommunications Company (TELESP) with the cooperation of the French Matra-Stericci-Honeywell-Bull consortium.

Other topics pertaining to cooperation were taken up during Correa de Mattos' visit to France: special telecommunications, computer time, and data transmission. The Brazilian minister left Paris yesterday for Copenhagen, from where he will go to London before returning to Brasilia.

Secretary Explains

Porto Alegre--The secretary of modernization and data-processing of the Ministry of Communications, Joao Carlos Fagundes Albernaz, said that the videotex system will be in operation in Sao Paulo by the end of the year. It is the first public data-transmission system in Brazil and consists in the use of conventional television sets adapted to receive data stored in computers through the telephone network. The data range from stock quotations to tourist services.

Joao Carlos Fagundes Albernaz was guest speaker yesterday in the series of talks during the commemorative week marking the 19th anniversary of the founding of the Rio Grande Telecommunications Company. During his talk, he stated that one of the objectives of telecommunications "is to democratize information," enabling the population to have access to all information in which it is interested.

Data Exchanges

The principal characteristic of the video system is its simplicity because it is only necessary to purchase an adapter (a digital keyboard similar to that of calculating machines). The machine is connected to the telephone and the

subscriber simply dials the number indicated to receive a given type of information, which will be displayed on the screen. According to Joao Carlos, the adapter will cost 20 to 30 percent of the price of a color television, which will make it accessible to a large number of people.

The public data transmission system will have 1,500 terminals during the first two years (1981 and 1982) and, depending on its acceptance in Sao Paulo, will be extended to other states. In addition to TELESP, which will have a computer with data stored in it, newspaper companies, the stock exchange and tourist agencies will also act as data banks.

Within 2 years, a public interchange network will be created for data communication by means of a telephone connection that will enable two computers to communicate with one another. The network will be established in 25 cities including Sao Paulo and Rio de Janeiro and will have 7,400 subscribers, most of them firms.

A data exchange on the supply and demand of freight in Parana, the data of which will be stored by the Ministry of Transportation will be installed in April. Utilizing a specific number, the carriers will be able to obtain information by telephone. After Parana, the freight data exchange will be extended to Santa Catarina and Rio Grande do Sul.

During the first half of this year also, a data exchange on the sale of bus tickets and parcel delivery in Belo Horizonte which will enable the subscriber to purchase tickets without going to the terminals.

The data exchanges are already operating in Sao Paulo where, since October 1980, it has been possible to learn the prices of essential food items by telephone. In the opinion of the secretary of modernization and data processing of the Ministry of Communications, the exchanges are aimed at taking care of the "community's growing need for information."

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CSO: 5500/2173

BRAZIL

MICROELECTRONIC INDUSTRY TO BUILD DOMESTIC COMPUTER

Rio de Janeiro JORNAL DO BRASIL in Portuguese 13 Mar 81 p 14

[Text] Porto Alegre--This year, Brazilians will be able to purchase domestic computers being built by the national microelectronic industry. It will be possible to program the computers not only to supply general information but also to schedule the activities of the user and the public market and supermarket purchases by the housewife.

The information was supplied by the subsecretary of services of the Special Secretariat of Data Processing (SEI), Henrique Costabile, a guest speaker in the series of talks commemorating the 19th anniversary of the founding of the Rio Grande Telecommunications Company. In his talk, he pointed out that "we are living at a good time for data-transmission networks and services in this country; it is certainly one of the phenomena that characterizes the decade."

Microelectronics

The domestic computers that are being built by the national industry will be a sort of "more sophisticated calculating machine," according to Henrique Costabile. The computers will be fed information supplied by the user himself, who can connect them to the television set to display the data on the television screen.

Henrique Costabile stressed that the domestic computers will have an accessible price--"perhaps the price of a color TV--and will be on sale in electric appliance stores. The public data-transmission interchange network, which will permit the automatic connection between the computers of network subscriber firms, will also be established this year.

The public network, which will be established by the Brazilian Telecommunications Company (EMBRATEL), will prevent data-transmission users "from having to establish their own infrastructure for access to the information." The subsecretary of services of the SEI added that a National Microelectronics Institute will be established in Campinas (Sao Paulo) in early 1982.

The establishment of the institute is aimed at encouraging the national microelectronics industry, which has a reserved market assured by the government. The National Microelectronics Institute, aimed at developing technology for the sector, will operate with industry support.

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CSO: 5500/2173

PHILLIPS-ERICSSON CONTRACT EXPANDED FOR PHONE NETWORK

Stockholm DAGENS NYHETER in Swedish 11 Mar 81 P 30

[Text] It is now clear that the Phillips-Ericsson Joint Ventures has expanded its contract with Saudi Arabia. The latest contract expansion is valued at 1.4 billion rials, almost 2 billion kronor.

The contract was signed last Tuesday by Saudi Arabia's Communications Minister Alavi Kayal and Phillips-Ericsson's assistant manager Carel Seegers.

Communications Minister Kayal read from the contract to DAGENS NYHETER:

The Ministry of Telecommunications can now sign an agreement with Phillips-Ericsson concerning the expansion of the telecommunications network in accordance with Saudi Arabia's third five-year plan for 200,000 lines at a price not to exceed 1,048 million rials.

Phillips-Ericsson received three earlier contracts at a total value of 12 billion rials--approximately 16 billion kronor--to modernize 200,000 lines and to install 800,000 new lines.

The first order for 1 million lines shall be completely installed by December 1982. The new contract for 200,000 lines shall be delivered during 1983 and 1984.

The terms of LM Ericsson's latest contract states that the responsibility shall be the same as in the three earlier contracts, i.e., Phillips and LM Ericsson will share equally in the delivery of supplies.

This means an increase in orders of almost 1 billion kronor for LM Ericsson.

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CSO: 5500/2167

TELEVISION, RADIO PROGRAMMING DETAILED

Enugu WEEKLY STAR in English 12 Apr 81 p 13

{Article by Dr E.U. Odukwe}

{Text}

BOTH the radio and the television belong to the broadcasting medium. They, like their counterpart the print medium, have the duty of serving the political system (the government)—informing, educating and entertaining the general public.

We shall be treating these two sisters of the same medium separately.

The Nigerian Television (TV) is still in its infancy, although it has been operating for many years now. It has made little or no progress since the last 10 or 15 years.

We can categorize its problems into two—hardware and software. These have to do with equipment and personnel.

They have weak and faulty transmitters. This could be the reason why our television sets regularly get blurred or blank and we hear some noise or none at all from the speakers.

If you are in some remote villages, you might not get any pictures. Moreover, there are very few channels to tune. (In some countries if the government cannot provide more TV stations private individuals are allowed to set their own).

The viewing should be increased from about 3pm—12 midnight to from 9am—12 midnight (from 7 to 15 hours daily). Our TV services are slightly better than the ones in some Communist countries where the public views only what the party or government wants them to see. We should reform our TV services in response to our new presidential government.

We enjoy very much the programme called *Ichoku*. This is a play about how a British administrator ruled his district during the colonial days.

The *News* watch is another programme which we view. From this we know the daily happenings in Nigeria and the world.

We watch the sports programmes—football, wrestling, boxing, etc. Sometimes we get frustrated because of the disturbed pictures or lack of sound.

Some programmes which are well handled are philosophy and life, newspaper reports, some local plays, Sunday variety or weekend shows and "Nigerian Dances".

Generally, the pictures presented as foreign movies are old and they are presented to the public several times a week. New slides or films should be shown as well. We have few movie houses in this country and Television can be used as a source of recreation. We know some people would be prepared to pay some tax for better movies.

These problems in TV might be due to the fact that some of the personnel are not well trained, lack of incentives, poor funding or rusted and old equipment.

The Nigerian Radio on the other hand, has advanced more than the television. This may be because it had been in existence long before the introduction of the TV and that the radion is less complex in built than the TV (Radio used only audio but TV uses both audio and visual. The TV appeals to two senses—ear and eye).

The simplistic nature of the radio has made it a cheaper medium to operate than television. Because of the cheapness, it reaches more people—especially the masses, or people in the rural areas. They can afford to buy radio sets.

Radio broadcasting is making a lot of progress. It has been able to overcome most of the technical problems (hardware) and personnel problems (software).

There are many radio stations in the Federation. Each of the 19 states has at least a radio station in its capital city. Some states have even more than one radio stations because they may have both the Federal Radio and state radio. State radio has normally a lower powered transmitter than the Federal Radio. It has programmes from morning till midnight.

We listen to a programme called "Newspaper Report". This we find very informative because, one learns what the dailies say about what is happening in and outside the country.

We enjoy the musical programmes—especially pop/rock music. But what we notice is that some D.Js. (Disk Jockeys) run out of words at times. Some air time is wasted. Some of the D.Js. need some more fineness to manoeuvre situations like that and not make listeners to tune to another station.

We also listen to "Forest Close". In this programme we come to learn about some men who are successful in their profession or field of study.

We encourage the educational broadcasts or programmes (School-on-the-air). We suggest that programmes like that be produced also for farmers in the villages to learn new techniques in improvement of our agriculture. Some programmes should be introduced for out-of-school youths about learning trades and societal discipline.

To help our radio and television improve (if they have limited funding from the government) they should expand a bit into commercials so as to raise some money to improve their services and facilities.

CSO: 5500

BRIEFS

POSSIBLE SWEDISH AID--The Ambassador of Sweden in Nigeria Mr Bo E. Elfwendahl recently paid a courtesy call on the Minister of Communications, Mr Isaac Shaahu in his office. During the call they discussed bilateral interest to both countries and also the possibility of increasing the already technical cooperation existing between the two countries whereby Sweden can train more technologists to man the telecommunications network in Nigeria. In the picture the Swedish Ambassador (sitting left) discusses with the Minister of Communications, Mr Isaac Shaahu (sitting centre). On the extreme right is the Minister of State in the Ministry of Communications, Chief Eteng Okoi Obuli, listening with interest. [Text] Enugu DAILY STAR in English 14 Apr 81 p 11]

CSO: 3500

NEW POST OFFICE SERVICES ANNOUNCED

Johannesburg THE CITIZEN in English 23 Apr 81 p 9

[Text]

THE Deputy Postmaster General in Charge of Telecommunications, Mr Rudie Raath, yesterday announced the introduction of several new services by the post office.

They are:

- The linking of word processors to telephone lines.
- A teletex service to be introduced by the end of next year; and
- Videoconference in the second half of this year.

Speaking at the opening of the South African Electronic Expo '81, Mr Raath said micro-electronic technology was developing at a phenomenal rate to accommodate "the information revolution".

"About 50 percent of the total national work force in a developed society is involved in the information business in one form or another.

"At one time technology was both the limiting factor and the driving force in telecommunications development," he said.

"Now the tables have turned and the driving force is the social need."

Mr Raath said the new services planned by the post office would be of particular significance to the business world and would create new markets for dealers in electronic equipment.

Word-processors had already proved their value.

"Nonetheless, once a message has been fed into the memory of a word processor, it becomes quite simple to arrange for the message to be transmitted by telephone line to the memory of a word processor in another area.

"We then have what is known as communicating word processors."

Mr Raath said the post office had so far prohibited the use of communicating word processors.

"But I now have the pleasure of announcing that the department will allow the

linking of communicating word processors to switchboards or private lines."

Teletex terminals would operate on their own lines and not use telephone links.

"But the end result is the same as that achieved with two communicating word processors — a neatly typed-out document which is in all respects identical to the original."

Teletex would be developed into a worldwide service operating to strict standards on a teletex network.

Mr Raath said regulations and tariffs applicable to communication word processors would be published in the Government Gazette of April 24 or, at the latest, May 1.

"Videoconference is another service with exciting possibilities.

"This service will be introduced on an experimental basis in the second half of this year between Pretoria and Cape Town." — Sapa.

SOUTH AFRICA

BRIEFS

NEW SABC RADIO MASTS--Four tall radio masts built by Naco Engineering of Germiston, will soon allow the South African Broadcasting Corporation to transmit its services to South America. Mr Paul Grudko, head of Naco's tower division, said the short-wave radio masts cost about R250 000 each. Steel Construction, February. [Text] [Pretoria SOUTH AFRICAN DIGEST in English 20 Mar 81 p 16]

CSO: 5500

SOVIET NEWS AGREEMENT SIGNED

Lusaka TIMES OF ZAMBIA in English 8 Apr 81 p 5

[Text]

ZAMBIA and the Soviet Union yesterday signed an agreement under which the two countries will exchange television and radio programmes.

Information and Broadcasting Minister Mr Mark Tambatamba signed for Zambia while Soviet ambassador to Zambia Dr Vassily Solodovnikov signed for his country.

Speaking at the brief signing ceremony held in his office, Mr Tambatamba said radio and television had become powerful instruments of communication.

Zambia and the Soviet Union were lucky because the role of the mass media in both countries was to enlighten and educate the people.

Mr Tambatamba said the Soviet Union has been an invincible ally of Zambia and the people fighting for liberation from colonialism and imperialism.

Zambia is currently nursing economic wounds sustained in the economic and political wars of Southern Africa which disrupted the country's ambitions, the minister said.

Hampered

The minister added that although Zambia would like to train people in various fields in mass communications, limitations of resources hampered such plans.

Mr Tambatamba assured Dr Solodovnikov that Zambia would do everything possible to promote the exchange of programmes between the two countries.

In reply Dr Solodovnikov said the agreement opened the way towards cooperation and exchange of information between the two countries.

The ambassador said the agreement reflected the desire for the developing and strengthening of the cooperation in all fields between the two countries.

The signing of the agreement was witnessed by the ministry's Minister of State Mr John Banda, permanent secretary Mr Edward Lubinda and other officials from the ministry and Soviet embassy.

— Zana.

MINISTER INTERVIEWED ON SPACE PROGRAM, TELECOMMUNICATIONS

Paris AVIATION MAGAZINE INTERNATIONAL in French 1-15 Apr 81 pp 44-45

[Interview with Mr Perluigi Romita, minister for research in space questions, by Patrice Prevot, date and place not specified]

[Text] [Question] For the first time, the Italian Government in 1979 established a national space program that was to run for 5 years and was intended to enable Italian industry to give proof of its technological capability. Administration of this program was entrusted to the National Research Council. But it seems that the structures of that body are poorly adapted to the management of this program. There is even talk of delays. What do you think about this?

[Answer] It is quite correct to say that the present structures of the CNR [National Research Council] are not flexible enough to meet the demands of a space program which is above all, in our case, a program of industrial promotion. In reality, CNR's structures are those proper to all the public bodies of this type existing in Italy. That is to say that the impact of administrative constraints [accountability, regulation, etc.] is very high.

And one must admit that since the management of the program was given over to CNR, there have been problems. But I do not think that one can speak of delays. It is true that we must rapidly find other solutions.

[Question] Precisely what types of solutions are you contemplating?

[Answer] I am in the process of developing solutions that will be based essentially on the creation of a national public interest corporation (with public shares) that will be under the regulations of the laws respecting private industry, so that the management of this company will rapidly be able to make the decisions that are required, and can do this outside the regulations appropriate for the state.

[Question] How soon could this new institution be operational?

[Answer] Somewhere around June.

[Question] Does the implementation of this national program constitute a first step toward a real long-term policy?

[Answer] Our national space program calls for a great effort on our part in the field of satellite telecommunications. We will also be launching a satellite, called "Italsat," which will benefit from the experience we will have acquired in the course of the L-SAT program, a program in which we are participating in the framework of the ESA [European Space Agency]. But "Italsat" will most of all enable us to extend still further our expertise particularly in the field of telecommunications, for example, with regard to high frequency transmissions.

It is also true that beyond telecommunications problems we want to pursue our activity in the field of observation of earth and large structures in space.

In fact, the current program is going to be completed about 1983, so we can plan the procedures to establish for the activities to come. This, naturally, in coordination with the ESA programs.

[Question] Two hundred billion lira, under 1977 economic conditions: this is what the Italian Government provided for fulfillment of this plan. If there is a need, will the Italian authorities be prepared to give a supplement, given the priorities your country currently has; I am thinking of automobiles, the steel industry, etc.?

[Answer] There is a previous agreement with the budget ministry according to whose terms we are going to review the status of the space program at the end of 1981. And at that time we will see if we are prepared to satisfy all our ambitions. But I think that we will be able to get a financial supplement if the need makes itself felt.

[Question] The Italian manufacturers complain about a lack of competence on the administration side of the space field. What do you think about this, and if you are gambling on the long term, do you contemplate taking measures on a national scale to assure the training of engineers in this specialty?

[Answer] This is an old story. When we produced the "Sirio" satellite a few years ago, we had great problems finding competent personnel. Indeed, for the administration, the problem of technological capability must be faced in order to correctly assess the offers made by the manufacturers. Also, there have been cases where Italian manufacturers were not able to meet all the needs. In fact, space activity is highly specialized. And one can only obtain a high level of qualification by working in the sector.

Naturally, today, both at the administrative and the industrial level, there is still a real lack of competence. But we anticipate increasing training and specialization, activities that will remain tied to practical projects.

[Question] Certainly, but putting the space program into operation is necessarily going to lead you to increase personnel at all levels. So how are you going to proceed, practically, to provide the training?

[Answer] By doing research applied toward industrialization.

[Question] Indeed, seen from the outside, one has the impression that it is the nation's manufacturers that have designed Italy's space policy. Is this correct?

[Answer] No. When we began this kind of activity, the Italian manufacturers were not really drawn to it. In reality, during the first years when we became interested in space, it was mostly political initiatives pulling the manufacturers along. Also, there were cases where Italian manufacturers were not able to meet all the needs.

Presently, the situation has changed. Of course the manufacturers are showing pronounced interest in the new programs, but I think that the basic decisions are still the result of initiatives made by the political authorities.

[Question] In reality, is the completion of this program going to change the relations between the manufacturers and the administration?

[Answer] Our objective: to have a public administration that is prepared for this task of industrial promotion, and that can pull its weight alongside industry. That will be possible if we succeed in setting up the new administrative structures of the program.

"We Are Also Ready to Cooperate with the Japanese"

[Question] Half the financial resources devoted to this national program will involve the field of telecommunications with, as you mentioned, the production of the "Italsat" satellite. That is to say that the Italian PTT [Posts and Telecommunications] ministry is particularly concerned. While this program is being developed with help from the government, could one envisage the financial participation of the PTT ministry in the short term?

[Answer] I think that PTT will participate in the new corporation to administer the program about which I spoke with you earlier. For beyond "Italsat," which will be a pre-operational satellite, we can envisage developing an operational satellite, a program that would then be placed under the responsibility of the PTT ministry.

[Question] Are you thinking of developing a military version of Italsat?

[Answer] No.

[Question] In view of the explosion of the commercial European satellites ("Telecom-1," "TV-SAT," and "IDF-1"), what is your policy on cooperation? Do you still believe in European commercial satellites?

[Answer] I do not think all commercial satellites will be European. I favor bilateral or multilateral initiatives. But one must safeguard the existence and operations of the ESA. The latter must have obligatory programs and optional programs to encourage multilateral accords that do not include all member states.

An important point: these programs should however be developed by utilizing the structures and the personnel of the European agency. For it is necessary for the

ESA to continue, even in the field of commercial satellites, to be the meeting point for European cooperation.

It would in fact be a serious mistake to think that two or three countries by themselves could develop space activities to a sufficient level to permit them to compete with the U.S.

We are thus open to any type of cooperation (to the degree that our industry stands to profit) not only in the European context, but with the Americans, or even the Japanese.

[Question] With "Italsat," you are probably also looking at the export market. But you are going to be arriving rather late on the telecommunications market. What are your ambitions in this domain?

[Answer] The telecommunications market is perpetually moving. Those who presently seem to be behind could seasonably be ahead tomorrow, to the extent that they are favored with a new technological breakthrough. Because in the field of satellite telecommunications, there is no point beyond which nothing further can be done.

[Question] On exportation, it seems that there is a criterion here which is extremely decisive: the parameter of financing. The manufacturers thus find themselves confronted with some problems in this respect. How is the Italian Government helping in this area?

[Answer] We do not have any means of direct involvement such as exists, for example, in France with the BFCE [French Bank of Foreign Commerce]. But we do have credit facilities, in other words [we can] provide low-interest loans (for example, 7.5 percent over 8 years as part of a supplier loan, for 85 percent of the total order, after a down-payment of 15 percent).

[Question] So it would be credit parcelled out piece by piece?

[Answer] Yes.

[Question] In purely electronic terms, the space industry should be demanding high-integration components. Is Italy's independence in this matter guaranteed?

[Answer] Independence is not totally guaranteed on this point. It is also one of our problems. This is why we are going to launch another national research program, oriented toward electronics, in order--if not to obtain total independence--to reduce as much as possible dependence [on non-Italian sources] for specialized components developed especially in the U.S. and Japan.

[Question] When are you going to launch this program?

[Answer] This year.

[Question] You have spoken of long-term policy. How can one imagine such a policy when governments change as frequently as they do in your country?

[Answer] If there were a change of government, I do not think the broad lines of the space program would be jeopardized. For though governments may change, the majority remains. That is to say that one does not depart from the broad general policy lines.

Nevertheless, that situation does pose problems at the time. Because the new minister must re-examine the situation.

9516

CSO: 5500/2181

PIRATE RADIO OPERATOR: EASY FOR FOREIGN POWER TO GET ON NET

Stockholm DAGENS NYHETER in Swedish 26 Mar 81 p 46

[Text] It is no problem at all for a foreign power to enter the Swedish radio network, says one of the men behind the pirate radio of Helsingborg, that made another move on Tuesday night and took over the local broadcasting from Program 1.

The spokesman also reveals that the pirate radio had received an offer in the 10,000 kronor range for propaganda broadcasting in Sweden by a neo-Nazi organization in West Germany, but that the pirates had declined the offer.

"We want to show that the telecommunications administration people are lying when it is claimed in the newspapers that measures against the security risks have been taken and it was claimed that our broadcast last Saturday would be the last one," says one of the "pirates." "That is why we repeated our broadcast on Tuesday night. The actual purpose of our intrusion into the radio network was to create a free radio in Sweden, but since that seems to be impossible, we primarily want to have a local radio in Helsingborg.

"There is no difficulty whatsoever involved with taking over the Swedish radio network, with regard to the so-called slave broadcasters, continues the spokesman, who for natural reasons wishes to remain anonymous. The apparatus that we use is of 25 watts and costs approximately 500 kroner. Using this apparatus it is easy to take over the P1 Broadcasting System in Helsingborg and besides that many other stations in Sweden that are broadcasting P1 and P3."

"But in Helsingborg both P1 and P3 are broadcasted at microwave frequencies which are harder to take over. But not so difficult that one could not imagine that it would be possible for a foreign power to fairly easily enter the microwave."

The attitude of the Helsingborg police is pessimistic:

"We cannot shoot crows with cannons, says Gosta Gillander of the police. Besides the telecommunications administration can hardly have been taken by surprise by the radio pirates. The telecommunications people told me about this security leak already early in the fall. Then they were only waiting for somebody to figure it out."

It is thus not only the Helsingborg broadcaster that can become the target for such sabotage. There are hundreds of such slave broadcasters all over the country. According to the "pirates" this is a very vulnerable system, that makes it very easy, for example, for foreign powers to take over radio broadcasts in Sweden. After the new manipulation of the Helsingborg broadcaster the telecommunications administration declared that the radio pirates would now be stopped.

"We are changing the technique and we are beginning to send the programs via a cable system instead of, as so far, via radio link."

9662

CSO: 5500/2170

SIMPLE ANTENNA TO ALLOW RECEPTION OF FRG TELEVISION IN 1982

Stockholm DAGENS NYHETER in Swedish 26 Mar 81 p 49

[Text] In about a year, when West Germany will begin to broadcast their TV programs via a satellite, viewers in southern and central Sweden will be able to follow the broadcasts by acquiring an antenna for a couple thousand kronor. The TV viewers of southern Sweden can also follow the satellite broadcasts of France which will be starting at the same time.

This is shown by a study that has been performed at the Institute for Applied Electronics in Lund.

The new study shows that earlier estimations of reception possibilities and antenna costs have been wrong.

"For TV viewers in southern Sweden it is going to be simpler and cheaper to acquire equipment that makes it possible to take in foreign programs when, for example, the TV satellites of West Germany and France are set up."

"It is, however, going to be both harder and more expensive to watch the same programs in the most northern parts of Sweden, says professor Goran Lind who has conducted the study.

The possibilities for Swedish and Nordic viewers to watch continental satellite broadcasting on the sly are based on the "overspill reception."

The TV satellites cannot be limited to send programs only over their own country, but the programs will have a distribution that causes some "spill" outside the borders of the country.

If, for example, the Nordast project would be materialized these programs can be watched in Czechoslovakia due to the overspill effect.

A so-called parabolic antenna is required in order to catch the satellite broadcasts. An antenna about 1 m in diameter costing a couple of thousand kronor would, for example, be adequate in Malmö to receive programs from West Germany, Holland, Italy, Belgium, Luxembourg and France when these countries have sent up their satellites. For practical reasons antennas of over 3.6 m diameter will hardly be possible to use. Such an antenna would, however, in Kiruna be enough in order to receive programs from West Germany and Great Britain.

The same antenna size would be adequate to receive programs in Gothenburg from West Germany, Holland, Italy, Belgium and Great Britain, while a TV-viewer in Stockholm would be able to receive only West Germany with such an antenna.

"These results may be of very significant importance for the continued Nordsat project. If it becomes possible to receive German and French programs many households will surely acquire new antennas, that is antennas that can also be used for a possible Nordic satellite," says section chief Rolf Rembe of the Department of General Culture of the Nordic Council.

The Lund study repudiates the fears that rain would ruin the possible satellite broadcastings.

9662

CSO: 5500/2710

SWEDEN

BRIEFS

FIRMS GET SATELLITE ORDER--Saab Scania's aircraft division and LM Ericsson will deliver parts to the West German and French communications satellite "TV-Sat TDF1." In exchange, French and West German suppliers will assist with the experimental Nordic satellite "Tele-X." The satellite will be launched with the aid of the "Ariane" rocket from French Guiana in South America. Saab-Scania will supply the command equipment, which will steer the satellite, as well as the structure, made of coal-fibre reinforced plastic. LM Ericsson will supply its specialty, antenna equipment. The order is considered an important breakthrough for Sweden, which for years has tried to enter the European space cooperative effort. [Text] [Stockholm DAGENS NYHETER in Swedish 21 Mar 81 p 34] 8952

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